01. Pre-Socratic Cosmology and Plato

I. Basic Issues

(1) Metaphysical
   (a) What do things consist of?
       • one substance (*monism*)
       • many substances (*pluralism*)

   Problem of the One and the Many
   - How is diversity derived from unity?
   - How is unity derived from diversity?

   (b) What is the nature of change?

(2) Epistemological
   (a) What is the nature of knowledge?
   (b) How is knowledge obtained?

Socrates ("SOH-kra-teez")
Died: 399 B.C.
Three questions to keep in mind:

1. What counts as a "scientific" explanation of a phenomenon?
   - An account of the causes of the phenomenon?
   - An account that places the phenomenon within a larger explanatory framework?
   - An account of the phenomenon that indicates how it follows from basic laws of nature?

2. What counts as "scientific" knowledge?
   - Knowledge of causes, natural laws, and/or general physical principles?
   - Knowledge based on observation and inductive inference?
   - Knowledge that makes no appeal to supernatural causes?

3. What distinguishes a natural explanation from a supernatural explanation?
   - testability?
   - reliability?
   - accuracy?
   - repeatability?
II. Pre-Socratics (~6th - 5th cent. B.C.)

1. Milesians and Monism (Thales, Anaximander, Anaximenes)

Thales ("THAY-leez") ~585 B.C.
- The Earth rests on water.
- Water is the *archê* (source) of all things.
- All things are full of gods.
- The magnet has a soul.

Anaximander ("Ah-NAX-ee-mander") ~550 B.C.
- Monism based on "apeiron".
- "apeiron" = the infinite/indeterminate/unlimited.
- *lacking* in qualities (boundedness, determinateness, limits, etc).

*Possible motivation*
- Observable phenomena are constituted from *earth, air, fire, water*.
- But the elements are opposed to each other.
- Thus, there must be some basic neutral substratum devoid of qualities out of which everything, including the elements, is constituted.
Anaximenes ("Ah-nax-EE-mah-neez") ~545 B.C.

- Monism based on air.
- Because: unlike apeiron,
  - air is observable
  - air can account for change (condensation and rarification)

General Characteristics of Milesians

1. Unity behind diversity: Order (kosmos) behind chaos.
2. De-emphasis on deification.
3. Critical inquiry into nature.
4. Development of materialism (basic material common to all things).
2. The Problem of Change

- How can change be explained in terms of fundamental material constituents?
  
  **Assumption:** If a constituent is fundamental, then it cannot change.

**Heraclitus ("Hair-ruh-KLY-tus") ~500 B.C.**

- Rejects assumption: Monism based on fire.
- Change is fundamental: everything is in flux.
- There are no persisting objects.

**Parminedes ("Par-MIN-nuh-deez") ~480 B.C.**

- Rejects reality of change:
  
  (i) Change requires the emergence of something out of nothing.
  (ii) Out of nothing comes nothing. (No being from non-being).
  (iii) Hence there is no change. (That which is, must be eternal).

- Distinction between "way of seeming" (based on senses), and "way of truth" (based on reason).
3. **Atomists and Pluralists** (Leucippus, Democritus, Empedocles)

Leucippus and Democritus ("Lew-SIP-pus", "Dem-MOK-kratus") ~440, ~410 B.C.

- Atomism = infinity of atoms moving *randomly* in an infinite void
- *Chance* collisions produce all things.
- Materialism with a vengance!
  - *No mind, no divinity, no design.*
  - *No protection from chaos.*
  - *No freedom (necessity rules).*
  - *Life itself is the motion of inert atoms.*

Empedocles ("em-PED-o-kleez") ~450 B.C.

- **Pluralism**: the basic material constituents are earth, air, fire, water.
- **Immaterial principles**: "love" and "strife" explain motion and change.
III. Plato (427-~348 B.C.)
The Theory of Forms (Phaedo, Republic, Timaeus)

1. Metaphysical Aspects. Two levels to reality:

<table>
<thead>
<tr>
<th>World of Forms</th>
<th>World of sensible objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>- World of Being</td>
<td>- World of Becoming</td>
</tr>
<tr>
<td>- unchangeable</td>
<td>- changeable</td>
</tr>
<tr>
<td>- eternal</td>
<td>- temporal</td>
</tr>
<tr>
<td>- incorporeal</td>
<td>- corporeal</td>
</tr>
<tr>
<td>- intangible</td>
<td>- sensible</td>
</tr>
<tr>
<td>- true reality</td>
<td>- dependent on World of Forms</td>
</tr>
</tbody>
</table>

- Sensible objects are *imperfect copies* of perfect Forms.
- Sensible objects "participate" in Forms.

*Example:* What is it that all actual triangles have in common?
- Plato: They all participate in the ideal Form of Triangle.
- **Claim:** The ideal Form of Triangle must *exist independently* of any actual triangle; otherwise, how could we identify any actual triangle as a triangle?
Implications:

(a) Problem of the One and the Many.
   - Unity is assigned to the World of Forms.
   - Diversity is assigned to the World of sensible objects.

(b) Problem of Change.
   - Both change and stability are real.
   - Stability is assigned to the World of Forms.
   - Change is assigned to the World of sensible objects.

2. Epistemological Aspects

(a) True knowledge is knowledge of the Forms (i.e., knowledge of general principles, universal properties, etc.).

(b) Knowledge is obtained through reason ("philosophical reflection").
   - Observation is downplayed (but not eliminated).
Problems with the Theory of Forms

(i) What things are there Forms for?
- moral and aesthetic ideals (justice, beauty, piety, the "good", etc.).
- geometric concepts (triangle, line, sphere, square, etc.).
- natural stuffs (water, fire, air, etc.).
- "undignified" qualities? (hair, mud, dirt, potatoes?).

(ii) The nature of "participation".
(a) Is the whole Form in each participant?
(b) Is only a part of the Form in each participant?
- If (a) then each Form will be "separate from itself" if it's in many things.
- If (b) then the Form is divisible and no longer a unity.